

REMARKS

Reconsideration and allowance in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-13 remain pending in the application. Claims 1-2 have been amended to better define the claimed subject matter.

Claim 2 is objected to because of the noted informalities. In response, claim 2 has been amended. Thus, withdrawal of the objection is respectfully requested.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph as being indefinite. In response, the term “algebraically” of claim 1 has been deleted. Applicants respectfully submit that the definition of a “nonlinear coefficient” is disclosed at page 1 of the specification of the present application. A nonlinear coefficient is a component of the matrix of the susceptibility tensor. An example of the nonlinear coefficient is disclosed at page 11 of the specification of the present application. Therefore, the claimed features of claim 1 are definite to one of ordinary skill in the art.

As to claim 2, Applicants have amended claim 2 to recite “the step of determining the thickness of the upper part of the initial grating having imperfections is performed by optical display devices,” which is believed to be definite.

Accordingly, the rejection of claims 1-12 under 35 U.S.C. 112, second paragraph should be withdrawn.

Claims 1, 2, 4 and 11 are rejected under 35 USC §103(a) as being unpatentable over Bhat (US 5,796,902). Applicants respectfully traverse the rejection for the reasons discussed below.

The technical problem solved by the claimed method is to produce a thick nonlinear optical grating with a thickness of several hundred microns. The thickness of

the structures disclosed by Bhat is limited to several microns. It is clear that the technical field of Bhat is different than that of the claimed invention.

Further, Bhat discloses a method of producing a good template before the epitaxial growth of the grating. On the contrary, the claimed invention is directed to a method of producing a good template, i.e., a nonlinear optical grating, after the epitaxial growth of the initial grating as recited in claim 1.

Further, as admitted by the Examiner in the Office Action, Bhat fails to disclose the claimed features, i.e., determining the thickness of an upper part of the initial thick nonlinear optical grating that has the structural imperfection and cleaning and checking the polished surface. Bhat fails to disclose these steps because there are no structural imperfections when grating have a small thickness. The growth defects only appear with a large thickness.

Accordingly, Applicants respectfully submit that it would have not been obvious to one ordinary skill in the art to modify the method of Bhat to produce gratings having a small thickness without imperfections to produce gratings having a large thickness with imperfections as disclosed in claim 1. Claim 1 is patentable over the applied art and the rejection of claim 1 should be withdrawn.

Dependent claims 2, 4 and 11 depend upon claim 1 and should be patentable over the applied art for the reason(s) advanced with respect to claim 1. The rejection of dependent claims 2, 4 and 11 should be withdrawn.

Claims 3, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhat in view of Becouarn et al. Claims 5, 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhat in view of Lallier. Applicants respectfully traverse the rejection because Becouarn and Lallier do not cure the deficiency of Bhat. In particular, Becouarn discloses that it is possible to obtain a thick layer in using a higher quality template as well as optimized growth conditions (see, page 2410 of

Becouarn). One of ordinary skill in the art would follow the method of Becouarn which is different than the claimed method. Lallier discloses a quasi-phase-matched GaAs crystalline material and does not disclose or suggest the claimed steps as defined in claim 1.

The dependent claims depend upon claim 1 and should be patentable over the applied art for the reasons advanced with respect to claim 1. The rejection of the dependent claims should be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

Early issuance of a Notice of Allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicants' attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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